

Applicant : Millard et al.
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REMARKS

In reply to the Office Action of November 7, 2005, Applicant submits the following remarks. Claims 7 and 21 have been amended. Claims 27-34 have been added. No new matter has been added. Claims 7-9 and 21-34 are now pending after entry of this amendment. Applicant respectfully requests reconsideration in view of the foregoing amendments and these remarks.

Section 112 Rejections

Claims 7-9 and 21-26 were rejected under 35 U.S.C. § 112, ¶ 2, as being indefinite. The applicant respectfully traverses in light of amendments made to claims 7 and 21.

Amended claim 7 is directed to a method to reduce debris deposition at one or more points on a window of a laser ablation system. The method now comprises directing a laser beam through an aperture in a window toward a target having organic materials thereon. The applicant believes the offending language has been removed from the claim.

Amended claim 21 has been amended to remove the term "inserting" and replace the term with "forming". The applicant believes this amendment addresses the Examiner's concerns.

Section 103 Rejections

Claim 7-9 and 21-26 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of U.S. Patent No. 5,898,522 ("Herpst"), in view of JP363105969A ("Nakagawa") and in view of U.S. Patent No. 5,075,534 ("Torii"). The applicant respectfully traverses in light of the amendments to the claims.

Amended claim 7 is directed to a method comprising generating a laser beam configured to ablate organic materials and directing the laser beam through an aperture in the window toward a target having organic materials thereon to ablate the organic materials.

Applicant agrees with the Examiner regarding the AAPA not describing a window with an aperture through which a laser beam passes.

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The Examiner points to Herpst for disclosing a passage 138 for allowing gas to bypass a lens. Gas can enter a lens assembly through the inlet 138 and can move around the either side of a protective window 132 (FIG. 11, col. 10, lines 16-22). The inlet 138 allows for equalization of gas pressure around the protective window 132.

The Examiner turns to Nakagawa for a laser apparatus comprising an apertured ball valve 4 for limiting vapor deposition on a window 1. Nakagawa addresses the problem of vapor deposition on a window 1 by disposing balls 4 bored with holes parallel to laser light during vapor deposition with a vacuum device (Fig. 1, Abstract). The balls 4 are placed in front of a window 1 and rotate during deposition.

The Examiner turns to Torii for apertured plates 22 and 24 for allowing passage of a laser while limiting ingress of sputtered particles and soot. Torii describes an arc sensor having a casing 12 with an objective lens 18 behind a transparent objective window 20 (Fig. 3, Abstract, col. 3, lines 21-43). In front of the window 20 are light screen plates 22, 24, which are opaque and formed of a heat-resistant material, such as an aluminum alloy or an iron system (col. 3, lines 44-68). Each light screen plate has an aperture 22a, 24a (Fig. 3, Abstract). The arc sensor is used for detecting a welding spot (Abstract).

The applicant submits that none of the cited references describe directing a laser beam through an aperture in the window. Herpst discloses a passage 138 to allow for gas equalization. However, there is no indication that the laser beam passes through the inlet 138. Nakagawa's Abstract describes rotatable balls 4 with a hole therethrough to protect a window 4. But the window 4 itself does not appear to have an aperture. One of ordinary skill in the art would not be motivated by Nakagawa to form a hole in a window, but rather to add rotatable balls with holes to protect a window. Torii describes a window 20, but the window 20 does not have an aperture. Rather, additional screen plates 22, 24 that are added into the casing 12 have apertures. One of ordinary skill in the art would be motivated by Torii to add screen plates 22, 24 with an aperture to the nozzle described by AAPA and not to form a hole in the window. For at least these reasons, applicant submits that no *prima facie* case of obviousness has been made with

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respect to amended claim 7. Claims 8 and 9 depend from claim 7 and are similarly not unpatentable over the cited references.

Amended claim 21 is directed to a method of producing a nozzle assembly of a laser ablation system. The method includes forming an aperture in a window and depositing said window on a top end of a nozzle. The nozzle has a bottom end and the top end. The top end of the nozzle is configured to be closer to a laser assembly of the laser ablation system than the bottom end and the window is positioned so that when a laser beam of the laser assembly emits, the beam emits through the aperture of the window.

Again, Herpst and Nakagawa do not suggest or disclose a window with an aperture. As noted above, Torii does not describe a window with an aperture. What Torii describes are screen plates 22, 24 with apertures 22a, 24a, in front of a window 20. The screen plates 22, 24 are not at a top of the nozzle assembly. Rather, the screen plates are in the middle or end of a casing 12. Further, applicant submits that the teachings of Torii would motivate one of ordinary skill in the art to add screen plates to a nozzle assembly, such as the nozzle assembly shown in the AAPA. For at least these reasons, the applicant submits that a *prima facie* case of obviousness has not been made for amended claim 21. Claims 22-26 depend from claim 21 and are similarly not unpatentable over the cited references.

Claims 8 and 22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over AAPA in view of Herpst, Nakagawa, Torii and further in view of U.S. Patent No. 4,059,067 ("Lardon"). The applicant respectfully disagrees.

Claims 8 and 22 depend from claims 7 and 21, respectively.

Lardon describes a window F and apertured screens A through which a laser is directed (Figure, col. 3, lines 32-46).

Lardon does not describe the window F as having an aperture. For similar reasons to those presented above with respect to Torii and Nakagawa, the applicant submits that one of ordinary skill in the art would not be motivated to form a hole in the window, but would add apertured screens to the device described by the AAPA. For at least this reason, applicant

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submits that no *prima facie* case of obviousness has been made with respect to claims 8 or 22 after amendment to claims 7 and 21.

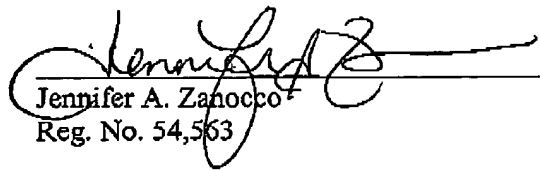
Applicant respectfully requests that the obviousness rejections be withdrawn.

Please apply the one-month extension of time fee in the amount of \$120.00 and any other required charges or credits to deposit account 06-1050.

Respectfully submitted,

Date:

March 7, 2006


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